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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Paper No. 16

Application Number: 09/616,635
Filing Date: July 26, 2000
Appellant(s): BOYLE, KEVIN R.

Darrin Wesley Harris
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 2/23/04.

(1) *Real Party in Interest*

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A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

No amendment after final has been filed.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is correct.

(7) *Grouping of Claims*

Appellant's brief includes a statement that claims 1-18 stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) *Claims Appealed*

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) *Prior Art of Record*

The following is a listing of the prior art of record relied upon in the rejection of claims under appeal.

5,467,324	Houlihan	11-14-1995
6,028,556	Shiraki.	02-22-2000

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2,5,7,9-11,14,17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Houlihan (5,467,324), in view of Shiraki (6,028,556).

1. Regarding Claim 1, Houlihan (5,467,324) disclosed A body-worn personal communications apparatus (100; Fig.1; Col.3; 1-12), comprising: a physically-shortened electric antenna (136; Fig.1); a transceiver connected to said physically-shortened electric antenna (Col.3; 16-21); a microphone (132; Fig.1) connected to said transceiver; and a casing, wherein said transceiver is disposed within said casing, (Col.3; 21-40)

Houlihan (5,467,324) fails to disclosed microphone is mounted on said physically-shortened electric antenna. However, Shiraki teaches in an analogous art, that wherein said physically-shortened electric antenna (10; fig.2) and said microphone (7; fig.3) are mounted on said casing. (2; fig.3) (Col.4; 45 – col.5; 25)

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wherein microphone (7; fig.3) is mounted on said physically-shortened electric antenna (10; fig.2) (Col.4; 45 – col.5; 25) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include microphone is mounted on said physically-shortened electric antenna in order to improve miniaturization.

2. Regarding Claim 2, Houlihan (5,467,324) disclosed all the particulars of the claim except a helical antenna. However, Shiraki teaches in an analogous art, that The apparatus of claim 1, wherein said physically shortened electric antenna is a helical antenna. (Col.4; 53–61) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include a helical antenna in order to minimize the space required for the antenna.

5. Regarding Claim 5, Houlihan (5,467,324) disclosed all the particulars of the claim except the microphone is located at the end of the antenna furthest from the casing. However, Shiraki teaches in an analogous art, that The apparatus of claim 1, wherein said microphone (7; fig.3) is located at an end of said physically-shortened electric antenna (8; fig.3) furthest from said casing. (2) (col.5; 12-25). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include a microphone mounted on said physically-shortened electric antenna in order to obtain the good communication channel quality.

7. Regarding Claim 7, Houlihan (5,467,324) disclosed The apparatus of claim 5, wherein said physically-shortened electric antenna is formed from a hollow wire, wherein a first electrical connection between said microphone and said transceiver is provided by said hollow wire, and wherein a second electrical connection between said microphone and said transceiver is provided by a conductor enclosed by said hollow wire. (Col.3; 41-51).

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9. Regarding Claim 9, Houlihan (5,467,324) disclosed all the particulars of the claim except the microphone is located at the end of the antenna furthest from the casing. However, Shiraki teaches in an analogous art, that The apparatus of claim 5, wherein said microphone (7; fig.3) provides a top loading to said physically-shortened electric antenna. (8; fig.3) (col.5; 12-25). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include a microphone mounted on said physically-shortened electric antenna in order to obtain the good communication channel quality.

10. Regarding Claim 10, Houlihan (5,467,324) disclosed A body-worn personal communications apparatus (100; Fig.1; Col.3; 1-12), comprising: a casing; a physically-shortened electric antenna mounted on said casing; (Col.3; 21-40)

Houlihan (5,467,324) fails to disclosed microphone is mounted on said physically-shortened electric antenna. However, Shiraki teaches in an analogous art, that wherein said physically-shortened electric antenna (10; fig.2) and said microphone (7; fig.3) are mounted on said casing. (2; fig.3) (Col.4; 45 – col.5; 25) wherein microphone (7; fig.3) is mounted on said physically-shortened electric antenna (10; fig.2) (Col.4; 45 – col.5; 25) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include microphone is mounted on said physically-shortened electric antenna in order to improve miniaturization.

11. Regarding Claim 11, Houlihan (5,467,324) disclosed all the particulars of the claim except a helical antenna. However, Shiraki teaches in an analogous art, that The apparatus of claim 10, wherein said physically shortened electric antenna is a helical antenna. (Col.4; 53–61) Therefore,

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it would have been obvious to one of ordinary skill in the art at the time of invention to include a helical antenna in order to minimize the space required for the antenna.

14. Regarding Claim 14, Houlihan (5,467,324) disclosed all the particulars of the claim except the microphone is located at the end of the antenna furthest from the casing. However, Shiraki teaches in an analogous art, that The apparatus of claim 10, wherein said microphone (7; fig.3) is located at an end of said physically-shortened electric antenna (8; fig.3) furthest from said casing. (2) (col.5; 12-25). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include a microphone mounted on said physically-shortened electric antenna in order to obtain the good communication channel quality.

17. Regarding Claim 17, Houlihan (5,467,324) disclosed The apparatus of claim 10, wherein said physically-shortened electric antenna is formed from a hollow wire, wherein a first electrical connection between said microphone and said transceiver is provided by said hollow wire, and wherein a second electrical connection between said microphone and said transceiver is provided by a conductor enclosed by said hollow wire. (Col.3; 41-51).

18. Regarding Claim 18, Houlihan (5,467,324) disclosed all the particulars of the claim except the microphone is located at the end of the antenna furthest from the casing. However, Shiraki teaches in an analogous art, that The apparatus of claim 10, wherein said microphone (7; fig.3) provides a top loading to said physically-shortened electric antenna. (8; fig.3) (col.5; 12-25).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include a microphone mounted on said physically-shortened electric antenna in order to obtain the good communication channel quality.

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Claims 3, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Houlihan (5,467,324) & Shiraki, in view of Hirai et al.

3. Regarding Claim 3, The above combination disclosed all the particulars of the claim except a meander-line antenna. However, Hirai teaches in an analogous art, that The apparatus of claim 1, wherein said physically shortened electric antenna is a meander-line antenna. (16; Fig.1; Col.3; 11-17). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include a meander-line antenna in order to minimize the space required for the antenna.

12. Regarding Claim 12, The above combination disclosed all the particulars of the claim except a meander-line antenna. However, Hirai teaches in an analogous art, that The apparatus of claim 10, wherein said physically shortened electric antenna is a meander-line antenna. (16; Fig.1; Col.3; 11-17). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include a meander-line antenna in order to minimize the space required for the antenna.

Claims 4, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Houlihan (5,467,324) & Shiraki in view of Barnard (WO 00/13329).

4. Regarding Claim 4, The above combination disclosed all the particulars of the claim except the antenna is mounted transversely to a plane through the casing. However, Barnard teaches in

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an analogous art, that The apparatus of claim 1, wherein said physically-shortened electric antenna is mounted transversely to a plane through said casing. (in the casing; Col.5; 22-28).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include the antenna is mounted transversely to a plane through the casing in order to provide a low bandwidth.

13. Regarding Claim 13, The above combination disclosed all the particulars of the claim except the antenna is mounted transversely to a plane through the casing. However, Barnard teaches in an analogous art, that The apparatus of claim 10, wherein said physically-shortened electric antenna is mounted transversely to a plane through said casing. (in the casing; Col.5; 22-28).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include the antenna is mounted transversely to a plane through the casing in order to provide a low bandwidth.

Claims 6, 8, 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Houlihan (5,467,324) & Shiraki, in view of McLean (GB 2036447).

6. Regarding Claim 6, The above combination disclosed all the particulars of the claim except the coaxial cable. However, McLean teaches in an analogous art, that The apparatus of claim 5, wherein said physically shortened electric antenna is formed from a coaxial cable that provides electrical connections between said microphone and said transceiver. (Page.2; 45-59) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include the coaxial cable in order to use the thickness of cable.

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8. Regarding Claim 8, The above combination disclosed all the particulars of the claim except the coaxial cable. However, McLean teaches in an analogous art, that The apparatus of claim 6, wherein said microphone provides a low impedance at radio frequencies to thereby enable said coaxial cable forming said physically-shortened electric antenna to act as an inductive stub.

(Page.2; 45-64) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include the coaxial cable in order to use the thickness of cable.

15. Regarding Claim 15, The above combination disclosed all the particulars of the claim except the coaxial cable. However, McLean teaches in an analogous art, that The apparatus of claim 10, further comprising: a transceiver, wherein said physically-shortened electric antenna is formed from a coaxial cable that provides electrical connections between said microphone and said transceiver. (Page.2; 45-59) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include the coaxial cable in order to use the thickness of cable.

16. Regarding Claim 16, The above combination disclosed all the particulars of the claim except the coaxial cable. However, McLean teaches in an analogous art, that The apparatus of claim 15, wherein said microphone provides a low impedance at radio frequencies to thereby enable said coaxial cable forming said physically-shortened electric antenna to act as an inductive stub.

(Page.2; 45-59) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include the coaxial cable in order to use the thickness of cable.

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Response to Argument

Further, Appellant even argues that the microphone and antenna are connected in Shiraki, but in the opposite manner as claimed. However, Shiraki discloses the antenna section (6) includes both the pipe (12) and the outer housing (8) in which the microphone resides. The fact that the microphone is "in" the antenna air-core is immaterial as to whether the antenna and microphone are connected to each other. Because microphone (7) is placed at the end of antenna pipe (12), as shown, the microphone is connected to antenna as claimed.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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April 8, 2004


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